

AQUAE LAB ECOSYSTEMS CONSERVATION INDEX 2025

(ALCI 2025 - Green Paper)



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1. Introduction

The Aquae Labs Ecosystem Conservation Index (ALCI) is a scientific, financial, and governance-based system designed to transform ecosystem conservation into tangible economic value. It functions by quantifying, validating, and monetizing ecosystem services using standardized monitoring, recording, and validation (MRV) methodologies across seven ecological service domains: biomass, photosynthetic productivity, oxygen production, water purification, microclimate cooling, soil organic matter, and biodiversity.

ALCI provides a unified methodology for converting ecological function into measurable and tradable credits. These credits are backed by performance-linked smart contracts, ensuring traceability, ecological integrity, and long-term conservation finance. Each credit reflects real services from real land, verified through scientific assessment and linked to a 33-year value framework, with five-year MRV cycles for revalidation and credit adjustment.



2. Methodological Foundation

The ALCI platform applies field-tested protocols and standardized scientific equations to derive ecological outputs. All data is sourced directly from the landscape using verifiable primary field methods. This includes biomass measurements using allometric equations, photosynthetic productivity modeling, soil profile sampling, canopy-based cooling analysis, and taxonomic biodiversity assessments.

Ecosystem services are converted into financial terms using market-aligned coefficients. For instance, oxygen production is valued based on industrial oxygen pricing benchmarks, water purification is derived from per-liter treatment cost equivalents, and biodiversity is evaluated using species presence and IUCN-weighted scoring where market values are unavailable.

Credits are issued digitally and are embedded in smart contracts that define their scope, validity period, ecological intervention type (baseline or aspirational), and associated monitoring commitments.

3. Credit Structure and Use Cases

ALECI credits are classified under two contract categories:

- Baseline Credits represent the current ecosystem function of a site and are guaranteed for five years of MRV.
- Aspirational Credits are issued for projected ecological improvements following restoration or management interventions and include comprehensive MRV across all indicators.

These credits are designed to serve real-world applications including:

- Environmental compliance and reporting under frameworks such as TNFD and CSRD
- Water stewardship and microclimate mitigation in industrial sectors
- Supply chain sustainability integration in regenerative agriculture
- Biodiversity net gain planning and species-specific conservation finance
- Urban cooling offsets and infrastructure resilience strategies

Each ALECI credit provides measurable ecological outcomes and traceable environmental return-on-investment. ALECI is adaptable across biomes and policy jurisdictions using the IUCN Habitat Classification system for universal application.

4. Market Relevance and Value Integrity

ALECI addresses key limitations in current carbon and conservation markets by offering a multi-service, performance-based crediting framework. It responds to growing demand for high-integrity nature-based solutions that go beyond carbon alone.

Valuation is dynamic and reflects changes in ecological performance. Credits can increase in value as restoration matures, species richness improves, or soil functions deepen. This approach incentivizes long-term land care while creating an asset class that retains and grows in value.

Revenue allocation is weighted to benefit the custodians and regenerators of the land. Up to 55 percent of credit proceeds are returned to land stewards and ecological monitors. The remaining share supports MRV services, platform infrastructure, and adaptive ecosystem management. This ensures that ecological and social returns are embedded in the economic model.

4. Creditanomics Breakdown

ALCI Creditanomics defines the issuance and allocation structure for **ALCI Fractionalized Credits**—units of ecological value backed by verified natural assets. Each ALCI unit represents measurable ecosystem services such as biomass, oxygen production, water purification, soil health, and biodiversity. These values are validated through ALCI’s **MRV (Monitoring, Recording, and Verification)** protocols. The credits are issued on a fixed-supply basis and deployed on blockchain to ensure transparency, traceability, and accountability in environmental finance.

Total Supply	Smart Contract Address
1,000,000,000 ALCI Fractionalized Credits	0xfDe53a9b73BF9DD93B3d44b558640be389FE3B5

4.1 Phase I Allocation – Verified Natural Asset-Backed Distribution

Category	Details
Private Sale	2,000,000 ALCI Fractionalized Credits (10%)
Period	1 August – 30 October 2025
Verified By	Baker Tilly (Ecological Monitoring, Recording, and Verification Audit)
Reinsured By	Lloyd’s of London Syndicate
Purpose	Enable early participation by institutional and strategic partners through a verified, sustainability-based appreciating asset offering

4.2 Public Sale – 18,000,000 ALCI Fractionalized Credits (90%)

- **Primary Market**

ALCI Fractionalized Credits will be initially issued through the official ALCI Platform. Access will be provided to eligible public investors, ESG-aligned funds, and conservation-focused institutions. This issuance ensures verified, traceable, and transparent allocation of nature-based credits.

- **Secondary Market**

Following the primary issuance, credits will be tradable between verified holders on approved ecosystem credit marketplaces. This facilitates liquidity, price discovery, and the broader circulation

of ecological value.

- **Purpose**

To establish open access to verified environmental credit instruments—enabling investment, holding, and exchange of ALCI Fractionalized Credits across regulated environmental finance ecosystems. This framework supports global participation in the ecological economy and incentivizes long-term conservation-linked asset holding.

5. Conclusion

ALECI is a next-generation ecosystem valuation system. It brings together scientific rigor, technological transparency, and equitable financial design. By grounding each credit in field-based performance, ALECI sets a new standard for ecosystem accounting and conservation finance.

Unlike speculative carbon instruments, ALCI credits reflect real ecological value with direct links to biodiversity protection, climate resilience, and regenerative land use. The platform is globally scalable, compliant with emerging environmental policy frameworks, and suitable for both public and private sector integration.

In an era of ecological and climatic urgency, ALECI provides a transparent, replicable, and fair mechanism to ensure that nature is not only protected—but valued. Each credit is more than a financial tool; it is a long-term commitment to the Earth's living systems and the communities who protect them.